

ATOMIC ENERGY *newsletter*®

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
ROBERT M. SHERMAN, EDITOR. PUBLISHED BI-WEEKLY BY ATOMIC ENERGY NEWS CO., 1000 SIXTH AVENUE, NEW YORK 18, N. Y.

Dear Sir:

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Expenditure of \$276,553,200 required for operations of U.K. Atomic Energy Authority for 1957-58, will be an increase of \$75,600,000 over 1956-57 estimated expenditures according to the authority's third annual report. Construction work will account for over \$56,000,000 of this increase. For 1956-57, major achievements of the authority included the start-up of Calder Hall nuclear power station; placing of contracts for two English nuclear power stations; provisional arrangements for the first Scottish station and a possible third English station; and formation of the Nuclear Energy Trades Association Conference. Research is also continuing at Harwell into methods of obtaining power from controlled thermonuclear reactions.

Net profit of Vitro Corp. of America, New York, for first six months of this year was \$774,333 after taxes, or 80¢ a share on the average number of shares outstanding during the period; this compares with 34¢ a share earned in the like 1956 period. Backlog of orders was \$93 million, down from \$114 million of six months earlier. Fall off in backlog was due to the running down of Vitro's five year contract with USAEC for refining of uranium salts; dollar total of this contract had made up large part of the backlog reported Dec. 31, 1956. Vitro's offer of common stock rights in April was said to have been entirely successful, with net proceeds to the corporation of \$2,694,292 after all expenses. Vitro, which is a diversified company engaged in many phases of nuclear work, is now acquiring Nems-Clarke, Inc., Silver Spring, Md., for 115,000 common shares worth approximately \$3 million at the present over-the-counter quotation. (Other FINANCIAL news, p. 2 this LETTER.)

Provisional agenda for the second International Conference on Peaceful Uses of Atomic Energy has been established by the seven-nation advisory committee for this conference, to be held in Geneva, Switzerland, Sept. 1-13, 1958. (First conference had been in 1955.) Agenda, as agreed upon, provides for 12 plenary sessions for papers of a general survey type, and four parallel series of technical sessions. Technical sessions will cover (1) chemistry and chemical processing of irradiated fuel, reactor technology, and related subjects; (2) nuclear physics, including physics of fission and fusion reactors, and associated subjects; (3) production and uses of isotopes and ionizing radiations in research, medicine, agriculture and industry, dosimetry, etc.; and (4) raw material supplies including refining of uranium and thorium, separation of isotopes, metallurgy and fabrication of fuel elements, and processing of other nuclear materials. (Other MEETINGS, COURSES, CONFERENCES, p. 4 this LETTER.)

In the planning stage by Globe Mining Co. and Union Carbide Nuclear Co. is \$7 million uranium milling plant for the Gas Hills area, near Casper, Wyoming. Capacity of plant is projected at 1,000 tons per day of uranium. Feed would be from Globe's holdings in the district, estimated by the firm to be more than 1 million tons, as well as from Union Carbide Nuclear's ore bodies in that area. (Other RAW MATERIALS NEWS, p. 4 this LETTER.)

bought 7,500 shares of common stock through stock option making his total holdings 7,530, while Robert B. Watts, vice president of the firm's Convair division sold 3,500 common shares reducing his direct ownership to 3,640.

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CONTRACT NEWS...of nuclear jobs...

EQUIPMENT ORDERED:- Large order for nucleonic equipment has been placed by Japanese Atomic Energy Research Institute with Tracerlab, Inc., Waltham, Mass. Order calls for supplying the various new research reactors of the Institute with reactor monitoring equipment. (According to S. S. Auchincloss, Tracerlab president, manufacture and sale of reactor monitoring instruments and services is becoming one of the most important parts of the company's nuclear business. To get its share the firm is devoting the efforts of its Western division, headed by Abel DeHaan, to a full time pursuit of this potential market.

CONTRACT AWARDED:- Ralph M. Parsons Co., Los Angeles, has received contract from General Electric Co. for detail design and construction of facilities to house the materials testing reactor which GE recently announced it will build at its new Vallecitos atomic laboratory, near Pleasanton, Calif. Reactor itself will be built by GE people. Installation will have a cylindrical steel containment vessel, 66-ft. in diameter, and 104-ft. long, to house the reactor; control building; and other facilities. Cost of the installation is set at approximately \$4 million.

CONTRACT NEGOTIATIONS AUTHORIZED:- USAEC has accepted as basis for contract negotiations proposal of Northern States Power Co., Minneapolis, for construction of 66,000-KW boiling water power plant. Proposal was made under USAEC's third round power demonstration reactor program. Over-all cost of project is estimated at \$29.8 million, including capital investment of \$21 million. NSP has contracted with Allis Chalmers to build reactor and plant; Pioneer Service & Engineering Co. has been selected as architect-engineer. NSP is asking USAEC financial assistance in amount of \$6 million for research and development, and excess operating expenses in the first five years, and an estimated \$1 million waiver of fuel-use charges. Associated with NSP in research and development phase of project are 10 utilities in the 5-state surrounding area which have formed Central Utilities Atomic Power Associates; group will make fixed-sum contribution of \$3.5 million to project.

INSTRUMENT CONTRACT LET:- Contract has been awarded to Radiochemistry, Inc., Tulsa, Oklahoma, by USAEC, for development of medium low level soft beta counting equipment. William Johnston, of Radiochemistry, Inc., will handle the work covered by a one year contract in the amount of \$60,000.00.

ATOMIC ENERGY FINANCIAL NEWS...

INCREASES IN EARNINGS SHOWN BY COMPANIES IN NUCLEAR FIELD:- Earnings by High Voltage Engineering Corp. for the first half of its fiscal 1957 year were \$147,142 compared with \$78,765 for the like 1956 period, Denis M. Robinson, president, has now advised his stockholders. The 1957 earnings were on gross sales of \$2,105,087 an increase of 62% over \$1,300,868 in sales for the 1956 period. Company backlog is now nearly \$8 million, Dr. Robinson noted..... General Dynamics Corp., whose Electric Boat, General Atomic, and Canadair divisions are engaged in nuclear work, showed gross sales for first six months of 1957 of \$726,081,499; this compares with \$414,443,947 for the same period in 1956. Estimated backlog on June 30, 1957 was \$1,989,000,000 with approximately \$654,000,000 in contracts under negotiation on that date. (Aircraft and guided missile prime contracts continued to account for largest percentage of General Dynamics gross. No significant contribution to the company's earnings has yet been shown by its General Atomic division, San Diego, Calif.; this is a long range project, with strong manpower in nuclear research and development being built up, and excellent laboratory facilities under construction there.)

STOCKHOLDING CHANGES REPORTED:- Changes in stockholdings of officers, directors, and large stockholders of listed corporations included purchase by George Rowe, Jr., vice president, of 5,000 capital shares of Stanrock Uranium Mines, Ltd., increasing his direct holdings to 9,612. Other transactions included sale by Continental Mining Exploration Ltd., of 200,000 common shares of Faraday Uranium Mines, Ltd., reducing direct holdings to 831,676. In another series of transactions, Frederic de Hoffmann, vice president General Atomic division General Dynamics Corp. bought 7,500 shares of common stock through stock option making his total holdings 7,530, while Robert B. Watts, vice president of the firm's Convair division sold 3,500 common shares reducing his direct ownership to 3,640.

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PRODUCTS, PROCESSES, SERVICES...in the nuclear field...

PRODUCT SHIPMENTS & SALES:- First commercial Cockroft-Walton accelerator produced in the U.S. has recently been shipped to University of Arkansas by its manufacturer, Applied Radiation Corp., Walnut Creek, Calif. Supplying monoenergetic fast neutrons, the machine will be used for research in nuclear physics and chemistry.

New orders recently entered on its books by High Voltage Engineering Corp., Burlington, Mass., for the company's Van de Graaff machines include a one MEV Van de Graaff ordered by Brookhaven National Laboratory, Upton, L.I., and a three MEV machine ordered by American Cyanamid Co., New York, for use by its Stamford, Conn., laboratories. Machines will be used in experimental investigations.

Some 57,000-lbs. of heavy water are now en route from U.S. to Aktiebolaget Atomenergi, Stockholm, Sweden. The heavy water, sold to the firm by the USAEC at \$28 per lb., will be used as moderator in the 76,000 thermal kilowatt nuclear reactor designed by Atomenergi to provide central district heating. (The reactor will also be used to experiment with successively more advanced fuel and coolant systems.) Berg-Hedstrom Co., Inc., New York, agents for Atomenergi, handled the shipment.

A model AGN-201 experimental nuclear reactor has been presented the University of Akron by Aerojet-General Corp., Calif., manufacturer of the low power reactors. Apparatus will be used by the University's physics department.

PRODUCT NOTES:- Radioisotope-excited lamp, model 535, using krypton-85, is new model in lamp line of United States Radium Corp., Morristown, N.J. The unit, weighing 10-lbs., has a single luminous port 5-in. in diameter and is said to be visible at 500-yards distance. Life of 10 years or more for device is claimed by manufacturer, with no power or maintenance required.

Nuclear Systems division of the Budd Co., Philadelphia, has reduced prices of cobalt-60 radiation sources about 50% to 70% effective August 1st. Reduction followed lower prices of Budd's supplier, the USAEC, which recently announced price changes in the raw radioactive cobalt that Budd processes and sells (this LETTER 8/6/57).

Experimental boiling water power reactor, recently completed by General Electric Co. at its Vallecitos atomic laboratory, is now undergoing initial reactor experiments, having achieved criticality. One of the laboratory's major nuclear research facilities, the reactor is to test designs and features of the 180,000-KW boiling water reactor being built by GE for Commonwealth Edison (Chicago) and the Nuclear Power Group, Inc.

PROCESSES:- Farbwerke Hoechst, whose six ton per day heavy water plant is scheduled for start-up this Fall, states its sales price will be about 24¢ per gram. Started about 2 years ago, plant represents expenditure of approximately \$1,700,000. (Method used by Hoechst, low-temperature distillation of hydrogen, believed to be lowest cost of any practical method known, is now being investigated by National Bureau of Standards at Boulder, Colo., where NBS is building pilot plant for that purpose. Published estimates of the cost of heavy water production by methods now used at the DuPont-operated Savannah River Plant of the USAEC are \$285 per lb. Distillation by low-temperature fractionation of hydrogen should be much less; lack of experience in U.S. in handling large volumes of liquid hydrogen at minus 250 deg. C. has hindered this approach.)

Working under a USAEC contract, western division of Arthur D. Little, Inc., Cambridge, has developed solvent extraction method for removing uranium from carbonate leach solutions. Little researchers feel that when carbonate leaching processes for recovering uranium come into more widespread use than at present, their newly developed process may find commercial acceptance.

SERVICES:- New service organization devoted exclusively to the field of nucleonics has been established by RCA Service Co., Inc. The new organization was said to be particularly interested in field and facility applications in atomic energy dealing with equipment maintenance and operation, field and system engineering, and training.

MANUFACTURERS' LITERATURE:- Brochure describing its environmental analysis service, and bioassay work is offered by Radiation Detection Co., 4047 Transport St., Palo Alto, Calif.

Catalog C704, describing its new nuclear and other instruments, is offered by Berkeley Division, Beckman Instrument Co., Fullerton, Calif.

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RAW MATERIALS...prospecting, mining, marketing...

UNITED STATES:- All assets of Golden Crown Mining Company have been acquired by Western Gold & Uranium, Inc., in an exchange of stock on a share-for-share basis. Golden Crown are owners and operators of the Orphan uranium mine in Arizona, claimed to be one of the richest in the U. S. The Orphan mine has been turning out primary uranium ore which averages 1.25% uranium oxide, according to R. G. Brown, Western's president. This would be about five times the national average. Western Gold operates uranium-silver mines, together with a mill, in the Silver Reef area near Leeds, Utah, and also has alunite deposits.

CANADA:- Over \$2.5 million worth of uranium oxide precipitates have been shipped by Consolidated Denison Mines up to the end of July, from its concentrating plant at its mine in the Blind River area of Northern Ontario, a company official states. For July, an average of 2,058 tons were milled daily, with tonnage treated being steadily increased; for July 31st, some 2,642 tons were milled. For first five days of August, an average of 2,544 tons per day were treated. Present plans call for operating at rated capacity of 6,000 tons daily by end of November. (Company holds contract to sell to Eldorado Mining & Refining, Canadian government purchasing agency, \$201,895,000 worth of uranium oxide precipitates at premium price.)

Can-Met Explorations is starting its concentrating plant at its uranium property in the Blind River area, which has a rated capacity of 2,500 tons per day, according to company officials. It is the fifth of the Blind River area plants in production, following Pronto Uranium, the two mills of Algom Uranium, and Consolidated Denison. Can-Met's government contract calls for supplying over \$75 million worth of uranium precipitates to Eldorado Mining & Refining.

NEW BOOKS & OTHER PUBLICATIONS...on nuclear subjects...

The Industrial Challenge of Nuclear Energy. Covers papers given during first information conference on nuclear energy for management, Paris, April 1957, sponsored by Organization for European Economic Cooperation (OEEC). --OEEC Mission, 2000 P St., N.W., Washington 6, D.C.

Proceedings of Conference on Engineering Education & Nuclear Energy. Includes papers by 29 educators, industrial administrators, and government officials who spoke at this conference, held September, 1956, in Gatlinburg, Tenn. 200-pages. No. TID-7527. --Office of Technical Services, Washington 25, D. C. (\$1.00)

Advisory & Coordinating Mechanisms for Federal Research & Development; 1956-57. Published by National Science Foundation; shows role of USAEC in Federal research and development. No. NSF. 57-15. --Superintendent of Documents, Washington 25, D.C.

Nuclear Power & Economic Development in Israel, by H. H. Landsberg and G. Perazich. Possible role of nuclear power in the economy of Israel. --National Planning Assoc., Washington, D. C. (\$1.25)

Governmental Indemnity & Reactor Safety; Hearings, 85th Congress, Mar. 25-27, 1957. No. Y4.At7/2:In 2/2 --Superintendent of Documents, Washington 25, D.C. (70¢).

NOTES:- Boron and its Isotopes, brochure prepared by Hooker Electrochemical Co., Niagara Falls, N.Y., which discusses boron-10 and boron-11 with uses, etc., may be obtained from USAEC, P. O. Box 538, Niagara Falls, N.Y. (Hooker is prime contractor for USAEC at the Niagara Falls facility.)

List No. 20, of U. K. Atomic Energy Authority, is compilation of original documents and translations issued by the Research Establishment and Industrial Group of the UKAEA. Compilation is by the Library of the Research Establishment, Harwell, Berks, England.

MEETINGS, COURSES, CONFERENCES...in the nuclear field...

LECTURE SERIES:- Series of five lectures on The Elements of Nuclear Reactor Metallurgy is being given Oct. 9 through Dec. 4, Brooklyn, N.Y., under sponsorship of New York Chapter of the American Society for Metals. Inquiries to George L. Kehl, School of Mines, Columbia University, New York 27.

Lecture series, Radiation for Industrial Physicians & Lawyers is being given Sept. 9-13, by Institute of Industrial Health and College of Law, University of Cincinnati, Ohio. Further information from Secretary, Institute of Industrial Health, College of Medicine, University of Cincinnati, Cincinnati, Ohio.

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ATOMIC ENERGY PATENT DIGEST...latest grants...

ISSUED August 6, 1957 to GOVERNMENTAL ORGANIZATIONS:- (1) Stabilized feedback amplifier. H.L. Fishbine, C. Sewell, Jr., inventors. No. 2,802,070 to USAEC. (2) Method and apparatus for collecting isotopes. W.E. Leyshon, inventor. No. 2,802,108 to USAEC. (3) Gold plating process. W. Seegmiller, inventor. No. 2,801,960 to USAEC.

ISSUED August 6, 1957 to PRIVATE ORGANIZATIONS:- (1) Radiation meter device. No. 2,802,112 to O. G. Schwede, Ventura, Calif. (2) Apparatus for measuring exposure to radiant energy. P. E. Ohmart, inventor. No. 2,802,113 to The Ohmart Corp., Cincinnati, Ohio.

ISSUED August 13, 1957 to PRIVATE ORGANIZATIONS:- (1) Linear accelerator. G. R. Marner, W. L. McCreary, inventors. No. 2,802,965 to Collins Radio Co., Cedar Rapids, Iowa.

NOTES:- Disclaimer to claims 1, 4, and 5 of patent 2,795,107 has been filed by assignee, Texaco Development Corp. The grant covers scintillometer.

PEOPLE...in nuclear work...

Roy B. Snapp has been appointed divisional vice-president of AMF Atomics Division with headquarters in Washington, D.C. Mr. Snapp, Washington attorney, was with the USAEC in 1946-47, serving as secretary (1947-52), and as special assistant to chairman (1953-54).

J. L. Meem, Jr., has accepted appointment at University of Virginia as professor of nuclear engineering, and will direct the reactor facility there. Dr. Meem had been chief reactor scientist for Alco Products, Inc., Schenectady, N.Y., during the period in which the company built the package power reactor for the U. S. Army.

Laurance S. Rockefeller, president and director of Rockefeller Brothers, Inc., and Robert W. Purcell, business advisor to the Rockefeller brothers, have been elected to the Vitro Corp. of America board of directors.

Donald W. Kerst has joined the General Atomic division of General Dynamics Corp. as project leader of General Atomic's thermonuclear energy research program. Dr. Kerst, inventor of the betatron, and professor at University of Illinois, is technical director of Midwestern Universities Research Association, organization to conduct nuclear research.

Thomas H. Johnson has been appointed manager of the research division of Raytheon Manufacturing Co., Waltham, Mass. Dr. Johnson is resigning from the USAEC, where he has been research director for the past six years.

Ralph P. Johnson has become assistant manager for manufacturing for the USAEC at Albuquerque, N.M. Ray C. Armstrong has been appointed assistant manager for operations at the USAEC's Oak Ridge operations, and will handle plants and laboratories in Oak Ridge plus six other facilities in some five states..... Stanislaw Ulam, internationally known mathematician, has been appointed a research adviser at the University of California-operated Los Alamos, N.M., Scientific Laboratory. Dr. Ulam has been at Los Alamos since 1944.

Sholom Arzt, research physicist, has joined Universal Transistor Products Corp., Westbury, N.Y. Dr. Arzt's work is to include basic research for development of radiation instrumentation and allied devices. He had been senior staff mathematician for the Applied Physics Laboratory, Johns Hopkins University.

Russell H. Morgan, professor of radiology at Johns Hopkins University, Baltimore, Md., has been appointed special consultant on the public health aspects of radiation for the Public Health Service, Department of Health, Education & Welfare. He will be principal adviser to the Surgeon General in development of the PHS's radiological health program, concerned with protection of the civilian populace from radiation.

Sincerely,

The Staff,
ATOMIC ENERGY NEWSLETTER

August 20th, 1957

